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Mazdoor Kisan Shakti Sangathan
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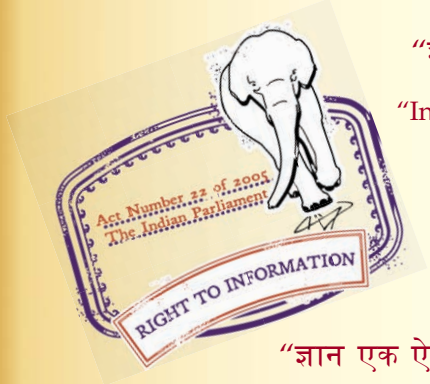
IS 5984 (1999): Glass Shells for Miniature Lamps [CHD 10: Glassware]



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Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

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IS 5984 : 1999
(Reaffirmed 2010)

भारतीय मानक

लघु लैम्पों के ग्लास खोल — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

GLASS SHELLS FOR MINIATURE LAMPS — SPECIFICATION

(First Revision)

ICS 81.040.30; 29.140.01

BUREAU OF INDIAN STANDARDS
MANAK BHAVAN 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

***May* 1999** **Price Group 3**

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Glassware Sectional Committee had been approved by the Chemical Division Council.

This standard was originally published in 1971. The standard has been revised to keep it in line with new technological developments. In this revision, the shells have been differentiated into four types. The permissible distribution of bubbles has been modified. The requirement of weathering on storage has been deleted as it is negligible in case of glass. The sampling plan has also been changed.

The composition of the technical committee responsible for the formulation of this standard is given in Annex B.

For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test or analysis, shall be rounded off in accordance with IS 2 : 1960 'Rules for rounding off numerical values *(revised)*'. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

AMENDMENT NO. 1 JANUARY 2006
TO
IS 5984 : 1999 GLASS SHELLS FOR MINIATURE LAMPS —SPECIFICATION

(First Revision)

(*Page* 2, *clause* **6.2**) — Insert the following at the end:

'**6.3** *BIS Certification Mark*

Each glass shell may also be marked with the Standard Mark.

6.3.1 The use of the Standard Mark is governed by the provisions of *Bureau of Indian Standards Act,* 1986 and the Rules and Regulations made thereunder. The details of conditions under which the licence for the use of Standard Mark may be granted to manufacturers or producers may be obtained from the Bureau of Indian Standards.'

(CHD 10)

Reprography Unit, BIS, New Delhi, India

Indian Standard

GLASS SHELLS FOR MINIATURE LAMPS — SPECIFICATION

(First Revision)

1 SCOPE

This standard prescribes the requirements and methods of sampling and test for judging quality and dimensions of clear glass shells, up to 18 mm in diameter, for miniature lamps. This does not apply for glass shells for miner's cap lamps.

2 REFERENCE

The Indian Standard listed below contains provisions which through reference in this text, constitutes provision of this Indian Standard. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this standard are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below:

IS No.	*Title*
1382 : 1981	Glossary of terms relating to glass and glassware (*first revision)*

3 TERMINOLOGY

3.1 For the purpose of this standard, the definitions given in IS 1382 and the following shall apply.

3.2 Neck

The part of shell between edge and shoulder *(see* Fig. 1).

3.3 Neck Diameter

The neck diameter shall be measured between edge and finishing point of the shoulder curve.

3.4 Shell Diameter

The maximum diameter of shell is known as shell diameter.

3.5 Edge

Lower portion of the shell is known as edge.

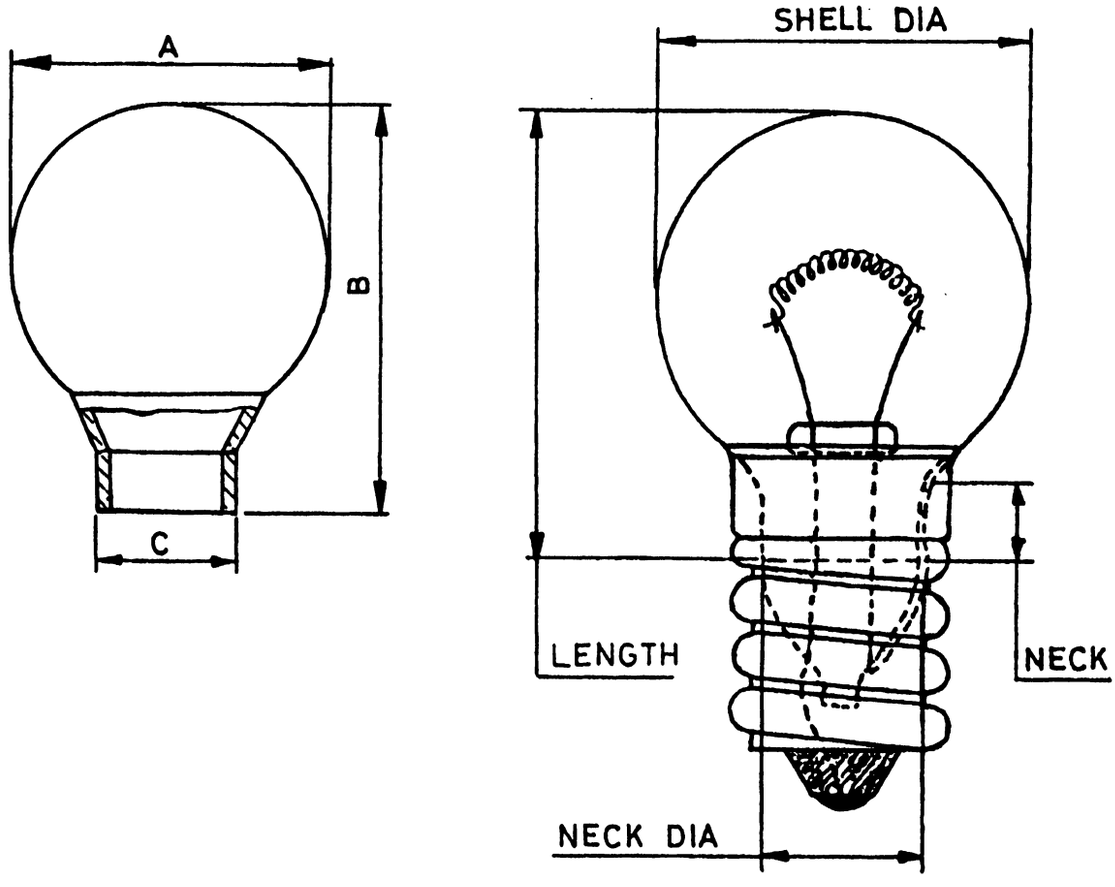

FIG. 1 GLASS SHELL AND LAMP

4 TYPES

There shall be four types of shells depending on their shape, as shown in Fig. 2, namely:

Type 1 — Spherical with narrow neck,
Type 2 — Spherical with wide neck,
Type 3 — Dome shaped, and
Type 4 — Pear shaped.

5 REQUIREMENTS

5.1 Dimensions and Tolerances

The dimensions and tolerances of glass shells shall be in accordance with Table 1 when read with Fig. 2.

Table 1 Dimensions and Tolerances of Glass Shells

Type	Nominal Shell Dia *(A)*	Tolerance on Shell Dia	Length *(B)*	Tolerance on Length	Neck Dia *(C)*	Tolerance on Neck Dia
	mm	mm	mm	mm	mm	mm
(1)	(2)	(3)	(4)	(5)	(6)	(7)
1	14	± 0.5	17.5	± 1	6.25	± 0.3
1	15	± 0.5	18.5	± 1	6.25	± 0.3
2	11	± 0.5	14.0	± 1	6.25	± 0.3
3	10	± 0.5	19.5	± 1	6.25	± 0.3
4	11	± 0.5	19.4	± 1	6.25	± 0.3

5.2 Workmanship and Finish

5.2.1 *Blisters, Bubbles and Seeds*

Blister which could be burst with finger nails shall not be present in any part of the shell. Glass shells shall also be free from bubbles more than 1.5 mm in diameter.

5.2.2 The permissible distribution of bubbles in glass shall be as follows:

a) Bubbles less than 0.5 mm in diameter not to exceed 10 in number,
b) Bubbles from 0.5 mm to 1.0 mm in diameter not to exceed 2 in number, and
c) Bubbles from 1.0 mm to 1.5 mm in diameter not to exceed 1 in number.

5.2.2.1 The distance between any two bubbles shall be not less than 10 times the diameter of the larger bubble.

5.3 Stone and Knots

Glass shells shall be free from metallic particles or uncovered stone. Glass shells containing two knots less than 0.75 mm in diameter shall be accepted.

5.3.1 The maximum number of bubbles and knots together more than 0.5 mm in diameter shall not exceed three in number.

5.4 Cords and Striae

Glass shells shall be free from such cords and striae which would obscure transmission of light in the finished lamp.

5.5 Defects in Blowing

Glass shells shall be free from deformities of shape and such other defects as mould marks, scratches and depressions.

5.6 Ovality

The permissible ovality for glass shell shall be two percent of the globe outside diameter.

5.7 Edge

The edge shall be free from any cracks.

5.8 Annealing

Glass shell shall be well annealed so that it is reasonably free from strain. The strain may be checked by a polariscope.

6 PACKING AND MARKING

6.1 Packing

Glass shells shall be packed as agreed to between the purchaser and the supplier.

6.2 Marking

All packages shall be clearly and indelibly marked with the following:

a) Type of glass shell,
b) Size,
c) Indication of the source of manufacture,
d) Month and year of manufacture,
e) Identification mark in code or otherwise to enable the batch of manufacture to be traced from record, and
f) Cautionary notice and symbol for **'GLASS, HANDLE WITH CARE'.**

7 SAMPLING

Unless otherwise agreed to between the purchaser and the supplier, the method of drawing representative samples and judging the criteria of conformity shall be as prescribed in Annex A.

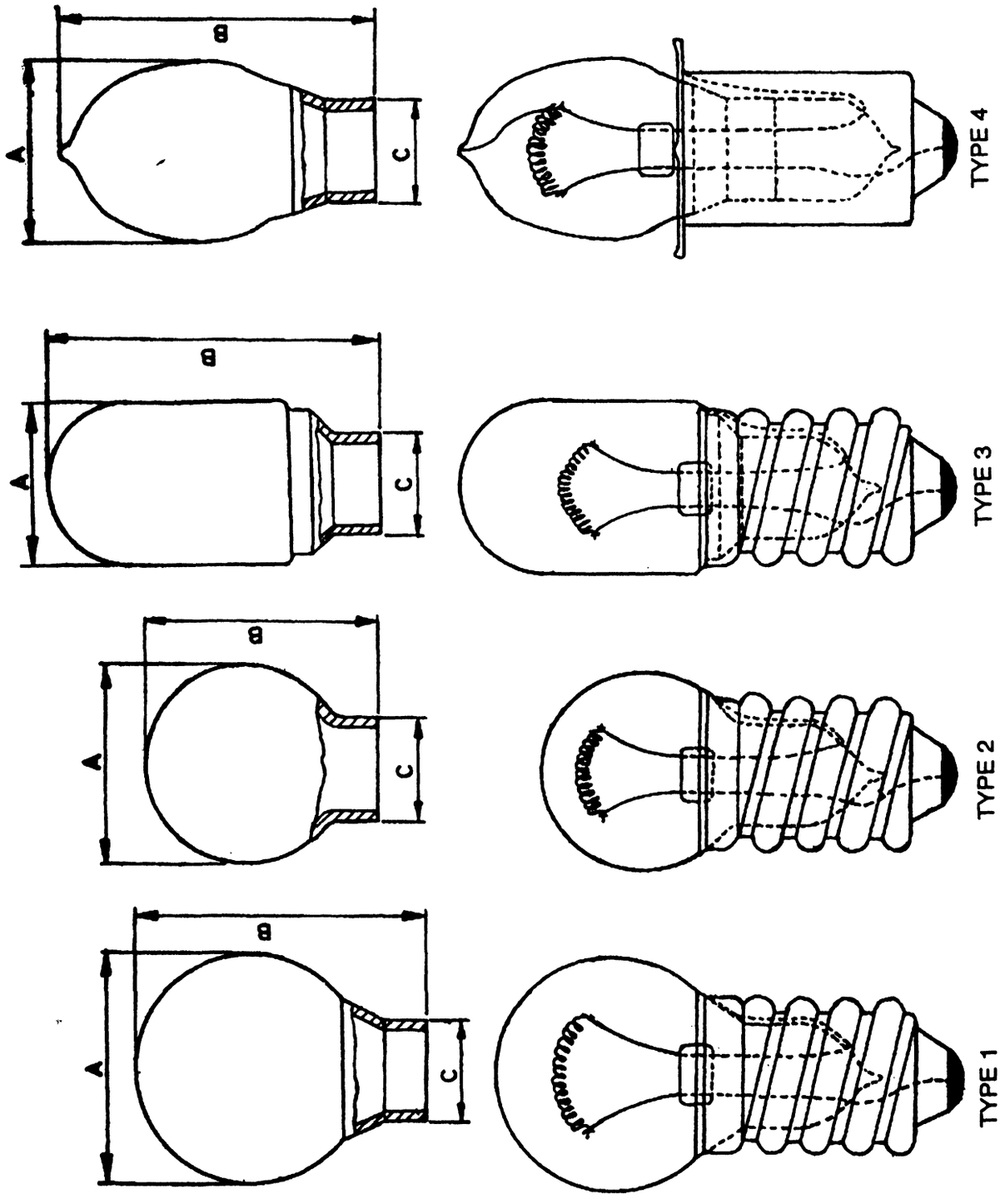

FIG. 2 SHAPES OF MINIATURE SHELLS AND LAMPS

ANNEX A

(Clause 7)

SAMPLING OF GLASS SHELLS

A-1 SCALE OF SAMPLING

A-1.1 Lot

In any consignment all the glass shells of the same type and dimensions and belonging to the same batch of manufacture shall be grouped together to form a lot.

A-1.2 Samples shall be tested from each lot for ascertaining the conformity of the glass shells to the requirements of the specification.

A-1.3 Table 2 gives the number of shells to be selected in the sample for different tests.

A-1.4 If the shells are packed in a number of boxes, 50 percent of the boxes shall be opened and from each of the boxes equal number of samples shall be selected at random to arrive at the required sample size prescribed in Table 2. The shells are to be drawn from different parts of the box—top, middle and bottom.

A-2 CRITERIA FOR CONFORMITY

A-2.1 All the glass shells selected according to col 1 and col 2 of Table 2 shall be examined for the presence of stones and knots, cords and striae, annealing, blowing defects and finishing defects. A shell failing in one or more of these requirements shall be termed as defective. For the lot to be accepted under this clause, the total number of defectives shall not exceed the corresponding acceptance number as given in col 3 of Table 2.

A-2.2 A lot which has been accepted under **A-2.1,** shall be examined for dimensional requirements, on the sub-sample selected as per col 4 of Table 2, out of the pieces already selected as per col 2 of Table 2. For the lot to be accepted under this clause, the total number of defectives shall not exceed the corresponding acceptance number as given in col 5 of Table 2.

A-2.3 The test consisting of the measurements of blisters, seeds and bubbles shall be conducted on the sub-sample of size given in col 6 of Table 2. The number of defectives shall not exceed the acceptance number of col 7 if the lot is to be finally accepted.

Table 2 Scale of Sampling and Criteria for Conformity

(*Clauses* A-1.3, A-1.4, A-2.1, A-2.2 *and* A-2.3)

Lot Size	For Visual Examination (5.3, 5.4, 5.5, 5.7 and 5.8)		Dimensional Requirements (5.1)		Requirements for Workmanship and Finish (5.2)	
	Sample Size	Acceptance No.	Sample Size	Acceptance No.	Sample Size	Acceptance No.
(1)	(2)	(3)	(4)	(5)	(6)	(7)
Up to 100	13	1	8	0	5	0
101 to 300	20	2	13	1	8	0
301 to 500	32	3	13	1	13	1
501 to 1 000	50	5	20	1	20	1
1 001 to 3 000	80	7	32	2	32	2
3 001 and above	125	10	50	3	32	2

ANNEX B

(Foreword)

COMMITTEE COMPOSITION

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(*Continued on page* 6)

(*Continued from page* 5)

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Amend No.	Date of Issue	Text Affected

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